

Amendments to the Claims

59. (New) A high specimen yield anti-reflux head for a needle aspiration biopsy device, comprising:

a cup-shaped hub having a bottom wall surrounded by side walls extending from the bottom wall along a hub axis terminating at a peripheral mouth;

a releasable collar fitting in a liquid tight seal over the peripheral mouth of the hub to define within the hub and collar a specimen collection volume;

an opening in the hub bottom wall receiving a proximal end of hypodermic needle extending substantially parallel to the hub axis;

a conduit communicating between a lumen of the hypodermic needle received by the opening in the hub bottom wall and an interior opening into the specimen collection volume proximate to one side wall, removed from the bottom wall;

whereby when the axis of the hub is horizontal, the interior opening into the specimen collection may be positioned by an operator in a top position such that sample material from the hypodermic needle entering the specimen collection volume through the interior opening collects against the opposite sidewall in a pool spaced from the interior opening to prevent reflux of the material through the interior opening, and when the axis of the hub is vertical with a distal end of the hypodermic needle extending downward, sample material collects against the bottom wall spaced from the interior opening to prevent reflux of the material through the interior opening; and

a hypodermic coupling attached to the releasable collar and including a manually operated valve controlling the vacuum flow within a coupling channel, one end of which being attached to a hypodermic syringe generating the vacuum flow, the other end of which communicates with the specimen collection volume receiving the vacuum flow.

60. (New) The anti-reflux head of claim 59, wherein the interior opening is directed toward an opposite side wall.

61. (New) The anti-reflux head of claim 59, wherein at least the side walls of the hub are transparent.

62. (New) The anti-reflux head of claim 61, wherein the conduit is configured to be visible through the transparent side walls such that an operator can easily identify the top position.

63. (New) The anti-reflux head of claim 59, where in the manually operated valve is configured to be in a top position when the interior opening is in a top position and the axis of the hub is horizontal.

64. (New) The anti-reflux head of claim 59, wherein the specimen collection volume is greater than 100 micro liters.

65. (New) The anti-reflux head of claim 59, wherein the peripheral mouth is configured to receive a lid to enclose the specimen collection well when the releasable collar is released from the hub.

66. (New) The anti-reflux head of claim 59, wherein the peripheral rim defines a greatest separation of side walls to facilitate access to the specimen collection volume.

67. (New) The anti-reflux head of claim 59, wherein the conduit, specimen collection volume, and collar are coated with an anticoagulant surface.

68. (New) A high specimen yield anti-reflux head for a needle aspiration biopsy device, comprising:

- a cup-shaped hub having a bottom wall surrounded by side walls extending from the bottom wall along a hub axis to define a specimen collection volume;

- an opening in the hub bottom wall receiving a proximal end of hypodermic needle extending substantially parallel to the hub axis; and

- a conduit communicating between a lumen of the hypodermic needle received by the opening in the hub bottom wall and an interior opening into the specimen collection volume proximate to one side wall, removed from the bottom wall whereby when the axis of the hub is horizontal, the interior opening into the specimen collection may be positioned by an operator in a top position such that sample material from the hypodermic needle entering the specimen collection volume through the interior opening

collects against the opposite sidewall in a pool spaced from the interior opening to prevent reflux of the material through the interior opening, and when the axis of the hub is vertical with a distal end of the hypodermic needle extending downward, sample material collects against the bottom wall spaced from the interior opening to prevent reflux of the material through the interior opening.

69. (New) The anti-reflux head of claim 68, wherein the interior opening is directed toward an opposite side wall.

70. (New) The anti-reflux head of claim 68, wherein at least the side walls of the hub are transparent.

71. (New) The anti-reflux head of claim 70, wherein the conduit is configured to be visible through the transparent side walls such that an operator can easily identify the top position.

72. (New) The anti-reflux head of claim 68, where in the manually operated valve is configured to be in a top position when the interior opening is in a top position and the axis of the hub is horizontal.

73. (New) The anti-reflux head of claim 68, wherein the specimen collection volume is greater than 100 micro liters.

74. (New) The anti-reflux head of claim 68, wherein the peripheral mouth is configured to receive a lid to enclose the specimen collection well.

75. (New) The anti-reflux head of claim 68, wherein the peripheral rim defines a greatest separation of side walls to facilitate access to the specimen collection volume.

76. (New) The anti-reflux head of claim 68, wherein the conduit and specimen collection volume are coated with an anticoagulant surface.

77. (New) A high specimen yielding aspiration biopsy device having and anti-reflux head, comprising:

- a syringe including a barrel and a piston slidable within the barrel, the syringe barrel extending along and concentric about a long axis and configured to introduce a vacuum flow;

- a valve for controlling transmission of the vacuum flow from the syringe;

- a cup-shaped hub linked to the valve having a bottom wall surrounded by side walls extending from the bottom wall along the long axis terminating at a peripheral mouth, the cup shape hub receiving the vacuum flow from the syringe;

- a releasable collar fitting in a liquid tight seal over the peripheral mouth of the hub to define within the hub and collar a specimen collection volume;

- an opening in the hub bottom wall receiving a proximal end of hypodermic needle extending substantially parallel to the hub axis;

- a conduit communicating between a lumen of the hypodermic needle received by the opening in the hub bottom wall and an interior opening into the specimen collection volume proximate to one side wall, removed from the bottom wall;

whereby when the axis of the hub is horizontal, the interior opening into the specimen collection may be positioned by an operator in a top position such that sample material from the hypodermic needle entering the specimen collection volume through the interior opening collects against the opposite sidewall in a pool spaced from the interior opening to prevent reflux of the material through the interior opening, and when the axis of the hub is vertical with a distal end of the hypodermic needle extending downward, sample material collects against the bottom wall spaced from the interior opening to prevent reflux of the material through the interior opening.